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Comparison of Heavy Metals (Zn, Cu, Ni, Pb and Cd) Concentration in the Intertidal Sediments of the Kharg Island during Summer and Winter

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Abstract

This study was carried out to determine contamination of heavy metals including zinc, copper, nickel, lead, and cadmium in the surface sediments of Kharg Island, Persian Gulf. Sediment samples were taken from five different stations during September 2013 and March 2014. The samples were transferred to the laboratory and acid digested with a mixture of nitric and perchloric acids and were analyzed by atomic absorption spectrophotometer (GBC Savantaa Σ models made in Australia). The results showed that the concentration of zinc, copper, nickel, lead and cadmium in the surface sediments of Kharg Island in the summer was 72.5±3.6, 28.8±2.9, 38.1±1.7 and 28.8± 2.1 µg/g. dry weight respectively. The concentration of heavy metals in the sediments shifted to 65.7±4.3, 36.3±2.7, 47.1±3.6 and 34.8±2.7 µg/g for zinc, copper, nickel, lead and cadmium respectively during winter. While, cadmium concentration was not detected in both seasons, copper, nickel and lead concentrations in the winter were higher than the values measured in the summer. The comparison of the amount of each heavy metal in the coastal sediments from Kharg Island with the values proposed by sediment quality standards revealed that heavy metals contamination was not of a serious environmental concern since the level of heavy metals in Kharg Island sediments felt within an acceptable range.

Keywords: *Pollution, Heavy metals, Kharg Island, Persian Gulf.*